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U. S. NAVAL HOSPITAL
Mare Island, Vallejo, California

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1 December 1949

From: Officer in Charge, Artificial Limb Department
To: Medical Officer in Command

Subj: Monthly report on the experimental work of the Artificial Limb Department

Ref: (a) Advisory Committee on Artificial Limbs ltr of 21 Jun 1949
(b) Research Division ltr of 24 Jun 1949, BUMED CODE 71/DJD:gh *now*

1. Monthly report required by references (a) and (b) is hereby submitted.
2. The following projects are under production, experimentation and further study: (NM 007 084)

(a) Lower Extremities Section:

I. Foot and ankle (NM 007 084.30)

The laminated rubber blocks for the ankle joint have been received and are being tested in the ankle moment device and curves are being plotted on the various combinations. Additional amputee cases who have been wearing the functional ankle joint for periods of from three to nine months are being called in and their prostheses are being tested in the ankle moment device and curves plotted. The ankle joints are being inspected, and wear and tear recorded and graded. To date a total of eighteen cases have been examined.

Three shoes and tracings have been received from the New York University and setups are being manufactured and will be sent to New York for service testing.

II. Shank (NM 007 084.10)

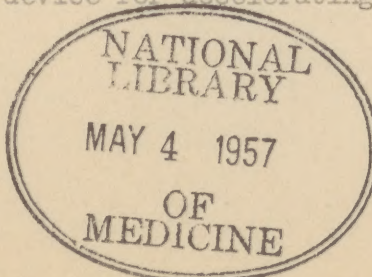
The molds for the new cosmetic shaped shin are still in the process of manufacture in the Naval Shipyard.

A supply of cotton stockinet has been received from a knitting mill. This stockinet has been made to requested specifications of long staple cotton and knitted with a standard denier. It is intended to use this laminate in conjunction with the plastic in order to secure a cheaper and stronger plastic shin.

III. Knee

(a) Mechanical (MN 007 084.32)

Thirty variable cadence knee joints are being manufactured for installation in additional cases. The device for accelerating testing of the variable



cadence knee joint has been constructed and four knee joints are in the process of accelerated testing.

IV. Cosmetic problem (NM 007 084.20)

No additional work has been done on the cosmetic problem this month.

V. Brief summary of status of models as a unit.

(a) Soft socket (NM 007 084.16)

A number of plastic cones (Pros-to-form) have been received from the Pacific Moulded Products Company. A below knee soft socket was constructed utilizing this plastic. It appears that this material is far superior to Celastic in ease of manufacture, although the cost of the material is higher. The higher cost of the plastic is offset by the saving in man hours in the manufacture of the socket.

A number of sockets are being manufactured utilizing flexible plastic (Boltaflex) as a substitute for horsehide. This material is so far proving satisfactory and it is the intention of fitting a number of cases utilizing this material.

(b) Upper Extremities Section:

I. Above elbow arm (NM 007 084.17)

An amputee has been fitted with the above elbow Navy-Fitch arm incorporating the elbow lock. This amputee is using the prosthesis in a highly satisfactory manner and states he feels the elbow lock is of great advantage to him, especially in working. This amputee further states that it requires more stump effort to operate the arm as compared with the conventional Navy-Fitch arm without an elbow lock.

II. Hands, hooks and tools (NM 007 084.18)

Four cases have been fitted with the Robinson hand incorporating the voluntary lock.

III. Cosmetic problem

No work has been done on the cosmetic problem of the arm this month.

IV. Harness and/or other outside control (NM 007 084.21)

No additional work has been done on the harness this month.

V. Brief summary of status of models as a unit.

A patient with a partial hand amputation has been fitted with a special prosthesis which consists of a socket over the wrist and stump and a small

Dorrance hook fitted on the end, connected to the shoulder. This patient has a small section of his thumb remaining and a small curved finger bar was fitted alongside the remaining thumb stump and he is able to grasp objects handily.

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